CLAIMS

1. A mechanical device for simultaneously drawing plastic films in the longitudinal direction and in the transverse direction, with the use of successive grippers (13) for holding, transporting and drawing the film (2), the grippers being supported and guided by rails (14) and driven forward by virtue of an endless chain (8) connecting the grippers (13) together, the endless chain (8) being driven by means of one or more sprockets (25), characterized in that it comprises, on each side of the film (2) that is to be drawn, an endless chain (8) guided on two rails (14, 16) of variable separation (E, e), the endless chain (8) consisting of a succession of links (9, 10) articulated to one another about vertical pins (11, 12), the grippers (13) being connected to one pin in two (11) or mounted between two links, and protruding on one side of the chain (8), being guided on one (14) of the two rails, while guide pieces (15) are connected to one pin in two (12) or mounted between two links, between the grippers (13), and move along the other (16) of the two rails such that according to the separation (E, e) and/or to the variation in separation of these two rails (14, 16) the successive links (9, 10) of the chain (8) are more or less aligned or, on the other hand, make angles with respect to one another so as to fix and/or modify the distance (d, D) between the successive grippers (13).

2. The simultaneous drawing device as claimed in claim 1, characterized in that the grippers (13) have bodies articulated about one in two (11) of the vertical hinge pins of the successive links (9, 10) of the chain (8), whereas the guide pieces (15) are articulated about the other vertical hinge pins (12) of the successive links (9, 10) of the chain (8) which are situated between the previous hinge pins (11).

3. The simultaneous drawing device as claimed in claim 1 or claim 2, characterized in that the two rails (14, 16) of variable separation (E, e) are of the "monorail" type, and in that the bodies of the grippers (13) on the one hand, and the guide pieces (15) on the other hand, are equipped with vertical-axis rollers (20, 22) rolling along the two lateral faces of the corresponding rail (14, 16) and with at least one horizontal-axis roller (21, 22) rolling along the top of the corresponding rail (14, 16).

4. The simultaneous drawing device as claimed in claim 3, characterized in that, on each gripper body (13) and on each guide piece (15), the lateral rollers (20, 22) comprise, on each side of the rail (14, 16), two upper rollers and two lower rollers.

5. The simultaneous drawing device as claimed in claim 4, characterized in that the two upper rollers (20, 22) have a slight vertical offset, as do the two lower rollers (20, 22), so that they can be imbricated.

6. The simultaneous drawing device as claimed in any one of claims 1 to 5, characterized in that, particularly in divergent portions of the two chains (8), placed one on each side of the film (2), the two rails (14, 16) converge such that the angles between the successive links (9, 10) of the chain (8) will gradually open up, and the successive grippers (13) will diverge from one another, thus drawing the film (2) in the longitudinal direction (L) and in the transverse direction (T).

7. The simultaneous drawing device as claimed in claim 6, characterized in that the two rails (14, 16) are parallel to one another and parallel to the direction (7) in which the film (2) is transported, and

have a maximum separation (E), in a film-preheating region (3) situated upstream of the drawing region (4), and in that these two rails (14, 16) are parallel to one another and parallel to the direction (F) in which the film (20) is transported and have a minimum separation (e) in a stabilizing region (5) situated downstream of the drawing region (4).

8. The simultaneous drawing device as claimed in any one of claims 1 to 7, characterized in that mechanical means are provided for locally modifying the separation of the two rails (14, 16) and/or their angle of convergence, so as to adjust the longitudinal and transverse draw ratios during production.